INSTRUCTION OF ARCHITECTS AND ENGINEERS — DIPLOMAS — GOVERNMENT INTERFERENCE.

One of the leading features, if not the great feature, which has arisen out of the late Exhibition, is the necessity for giving to our industrial classes such an education—sound, systematic, and practical,—as may fit them to pursue their several callings with more credit to themselves, and greater benefit to the country at large. Good: to this no one can object. But what if it be found, on pursuing the inquiry, that many persons at present engaged in the direction of, and having the control over, a large portion of these classes, and who cannot be placed in the same category with them, should also be wanting in a proper knowledge of their profession, be possessed of attainments of a very common order, and be allowed to pursue their occupation without "let or hindrance," without the public having any guarantee that they are what they represent themselves to be, that they are qualified to undertake the construction of important works, and to regulate the expenditure of large sums of money. Yet this is actually the case with our engineers and architects, as every one must know. They, unlike other professional men, are not obliged, before commencing practice, to follow any systematic course of instruction: they are not required to undergo any rigid examination, that their qualifications may be fairly tested; nor is there any law at present to prevent even the most ignorant from assuming the titles of architect, or engineer, or the high-sounding initials C. E., and thus misleading others, and bringing disgrace on the professions themselves.

In the infancy of a science, when the principles on which it depends are vague, undecided, and undefinable, it is easy to understand how impossible it would be to lay out a course of examination as a test of proficiency in it; but when these become known and appreciated, as they must be sooner or later, this difficulty is removed. Hitherto some such cause as this may, perhaps, have precluded the possibility of requiring our architects and engineers to be subject to the same laws as other professional men, for though the practice of these professions dates from the earliest period, the application of science to them is of a comparatively recent date. Now, we fancy, the strongest advocate of the "practical" dogma would be rather loath to admit, that he was guided by no rule or principle in the design and construction of his works, that it was all hap-hazard or chance, precedent rather than principle. As the number of precedents, however, increase, principles are evolved, and principles beget laws, and laws decide, fix, and regulate a science.

Formerly the professions of the architect and the engineer were pursued in common, and even now much of the knowledge required by the one is necessary for the other. Both should be equally well grounded in the mathematics, the root and foundation of most of the other sciences,—especially in mixed or applied mathematics, so as to comprehend the principles of proportion: both should be thoroughly acquainted with natural philosophy; that the nature of the different elements, and their operation upon one another, may be precisely known, and particularly with the important branches of mechanics, hydrostatics, and hydraulics: both should be possessed of such a knowledge of chemistry, as, at least, to understand the action of the elements on materials, and the processes which many materials have to undergo to be reduced to the purposes of construction; and also of geology and mineralogy so as to ascertain the value, relative and absolute, of the various materials used in construction. More than this, they both require to be perfectly informed on, if not practically acquainted with, certain technical branches of art, as carpentry, masonry, and iron-work. Here, perhaps, they might diverge,—the architect to make the fine arts, and the ornamentation of buildings, his peculiar study, and the engineer to gain experience in the details, and mode of carrying out, of those numerous constructions with which, at the present day, he has to deal.

Do we find such a course of instruction pursued by the vast body of young men now entering these professions? And, if not, how are their ranks recruited? Too frequently, it is to be feared—for after all it is but a tithe of the whole number who attend the engineering and architectural classes established at some of our colleges—a boy on leaving school, with just an ordinary education, is thrust at once into an engineer's shop, or into the office either of a civil engineer or an architect; becomes an apprentice or a pupil, and if like the generality of apprentices and pupils, wastes and fritters away a great portion of his time, knowing little when out of it, occasionally nothing at all, and yet, forsooth, he is an architect or engineer. Students or pupils in other professions may be equally neglectful for a time, but only for a time, as they have an examination before them—great incentive to industry, perseverance, and application—which some way or other they must pass before they are recognised or are allowed to practise in their respective callings.

Some few years back this evil was strongly felt, and out of the feeling grew the College of Civil Engineers—the C. C. E.'s,—but originated as it was by indifferent parties, not by the engineers themselves, taking no heed to their remonstrance or counsel, and assuming that engineers could be turned out ready made, no wonder that it proved, as was predicted, a most signal failure. It began with the wrong people, and in the wrong way. The attempt to bring up engineers, without going through the ordeal of an office, and experience on *actual* works (not playthings and pretty toys, as at this place), was tantamount to saying, that a medical man could learn his profession without any hospital practice, or, that a man could become a lawyer without experience in the routine and practice of the courts—an utter absurdity. Any reform for the improvement of a class, must spring from that class itself, who are necessarily the best informed on its wants and requirements, and most interested in carrying them out. To the architects and engineers themselves, then, must we look for any melioration of the present evils in the system of instruction, and for establishing a fair claim to those rights and privileges now enjoyed by other professions; nor can it be too strongly enforced, that this step is daily becoming more urgent and necessary. If, in the first instance, a Bill was introduced into Parliament, to prevent any one from practising in either of these professions, unless they have been regularly bred to it, and have passed a creditable examination, then one great point would have been gained; and afterwards, some scheme might be devised for promoting the acquisition of those branches of learning which it is desirable for them to know. The consequence of these professions having hitherto neglected to do so is already too apparent to be passed over in silence.

Last Thursday saw the opening of a "Government School of Mines," soon to be followed, doubtless, by an edict that no one shall practice that branch of engineering without their diploma. Now, why engineers, more than medical men and lawyers, should depend on Government aid, is a mystery, rendered all the more perplexing by our knowledge of the fact, that engineers do rail most violently against every instance of Government control. Do these gentlemen forget that Government aid must involve, more or less, Government control, and that in this case the effect of the interference of the Government will be to destroy the independence and dignity of their profession? Is it such a poor and beggarly one that it cannot support itself? Or have its members lost all pluck and courage, and, in dealing with vast enterprise for others, lost all enterprise for their own calling? We can neither admit the one nor believe the other. As the duties and responsibilities of engineers have been great, their rewards must have been equally so; therefore poverty cannot be their besetting sin. And to believe that those men who guide and control the elements, making each one subservient to the uses and wants of mankind, whose operations extend over both land and water, now rearing the mighty fabric which shall resist the relentless ocean, and give a safe anchorage for our ships, now tunnelling through the bowels of the earth, or building up those gigantic structures which span the valleys,—to believe that these men are wanting in spirit and individual enterprise is to believe that a noble occupation has a debasing influence instead of the very contrary.

We have seen how closely allied architects and engineers have been, and how very similar their course of instruction must now be. But perhaps it may be said that the science of construction is of so various and diffuse a character that no one man could be found competent to undertake the whole of it. This must be admitted; and herein we are again supported by the example of other professions. Neither in law nor in medicine do we find one man required or attempting to grasp the whole subject. There are barristers and attorneys, physicians and surgeons; and even these are again subdivided according to accidental circumstances or to the peculiar bias of a man's mind; for one man becomes celebrated in equity, another in common law, another in conveyancing, and so on; and every disease or ailment has some particular men, or set of men, who have made it their especial study, yet this subdivision is not considered to be inconsistent with a thorough knowledge of the principles on which each and all depend. So with engineering and architecture, even as now pursued, one man becomes renowned as a railway engineer, another as a hydraulic engineer, dealing with harbours, breakwaters, &c., and another as a towns' engineer: one man becomes famed as a Gothic architect, and another as a classic architect, though the knowledge on which skill in either of these branches is founded is, or ought to be, the same. Let us, then, indulge the hope, that architects and engineers, instead of being antagonistic to one another, as they have sometimes been, may unite and form one common body, which, while allowing each to perceive its individuality, might demand and procure that as a whole which, single-handed, there might be some doubt of their obtaining.

TERMS.

NOTES IN THE PROVINCES.

Nottingham.—The trustees of Parliament-street Chapel have presented to Mr. Groves, of London, a massive silver salver, with an inscription engraved thereon, expressing their approval of the manner in which he has completed the erection of their organ.

Northaw (Herts).—New schools and schoolhouse have been erected here, at a cost of 750*l.* from a design by Mr. S. S. Teulon, architect. The builder was Mr. W. Norris, of Hackney. The structure is of red brick, with Caen stone dressings, and open stained roof. The opening took place on 24th June last.

Lynn.—Mr. Bennett's tender for the repewing of St. Nicholas' Chapel has been accepted. The sum at which it is taken is 1,243*l.*,—the whole to be done in the plainest manner; but should ornamental carving be preferred, 200*l.* more will be required. As yet, it is said, the subscription list will not warrant this additional expense.

Cambridge. — The Corporation committee, appointed to receive estimates for the erection of almshouses for the Hospital of St. Anthony and St. Eligius, according to designs prepared by Mr. R. Reynolds Rowe, architect and town surveyor, have received the following tenders:—

Messrs. Quinsee and Attack	£760
Messrs. Peck and Son	745
Mr. Bullock	735
Messrs. Hunt and Stevens	692
Mr. Richard Freeman	670
Messrs. Bell and Sons	657

The last was unanimously accepted, and the works were ordered to be commenced forthwith. The shattered and ugly almshouses, which have for so many years disfigured the principal approach to the town, as remarked by the local *Chronicle*, are thus about to be removed.

Windsor.—Much fault, says a contemporary, is found with the structure of the substitute for the old Datchet Bridge (Victoria Bridge), and the lodge built adjoining, it is said, has

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